



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,574	09/23/2003	Mayuko Okada	501152.20022	3046
Eugene LeDonne Reed Smith, LLP 599 Lexington Avenue, 29th Floor New York, NY 10022			EXAMINER SHOSHO, CALLIE E	
			ART UNIT 1714	PAPER NUMBER
			MAIL DATE 07/11/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

10/668,574

Applicant(s)

OKADA ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 22 June 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because

(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);

(b) ☐ They raise the issue of new matter (see NOTE below);

(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☒ Applicant's reply has overcome the following rejection(s): rejection utilizing Koga et al. (U.S. 2003/0073759).

6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: 1, 2 and 4-6.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: 7, 8 and 10-12.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attachment.

12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_

13. ☐ Other: \_\_\_\_\_.

Callie E. Shosho  
Primary Examiner  
Art Unit: 1714

**Attachment to Advisory Action**

1. Applicants' response filed 6/22/07 has been fully considered but, with the exception of arguments relating to Koga et al. (U.S. 2003/0073759), the response is not persuasive.

With respect to Valentini et al. (U.S. 2005/0020730) and Segawa et al. (U.S. 2004/0024086), it is noted that previously the examiner argued that applicants are not entitled to the benefit of the foreign priority filing date with respect to the disclosures set forth in present claims 7-8 and 10-12 given that there is no disclosure in the foreign priority document of ink comprising dipropylene glycol n-propyl ether, acrylic polymer, a water-insoluble coloring agent, and water wherein "a blending ratio of the dipropylene glycol n-propyl ether with respect to the acrylic polymer is 0.5 to 2 on the basis of weight" and therefore, it was the examiner's position that Valentini et al. and Segawa et al. remained relevant references against present claims 7-8 and 10-12.

In the response filed 6/22/07, applicants argue that the verified English translation of the foreign priority document discloses the amount of dipropylene glycol n-propyl ether is 0.2-10% and the amount of acrylic polymer is 0.1-5% and that from these amounts values of dipropylene glycol n-propyl ether and acrylic polymer may be chosen, i.e. 0.2% dipropylene glycol n-propyl ether and 0.4% acrylic polymer, such that the verified translation discloses that the blending ratio of the dipropylene glycol n-propyl ether with respect to the acrylic polymer may be 0.5.

Similarly, applicants argue that values of dipropylene glycol n-propyl ether and acrylic polymer may be chosen, i.e. 10% dipropylene glycol n-propyl ether and 5% acrylic polymer, such that the verified translation discloses that the blending ratio of the dipropylene glycol n-propyl ether with respect to the acrylic polymer may be 2.

Based on the explicitly disclosed upper limit of dipropylene glycol n-propyl ether, i.e. 10%, and the explicitly disclosed upper limit of the acrylic polymer, i.e. 5%, as well as example 4 of the verified translation which discloses ink comprising 1% dipropylene glycol n-propyl ether and 0.5% polyacrylic acid sodium salt or blending ratio of the dipropylene glycol n-propyl ether with respect to the acrylic polymer that is 2, the examiner agrees that applicants are entitled to the benefit of the foreign priority date for the upper limit of the blending ratio of the dipropylene glycol n-propyl ether with respect to the acrylic polymer, i.e. 2. However, the examiner's position remains that applicants are not entitled to the benefit of the foreign priority filing date with respect to the lower limit of the blending ratio of the dipropylene glycol n-propyl ether with respect to the acrylic polymer, i.e. 0.5. There is no explicit disclosure of the blending ratio of the dipropylene glycol n-propyl ether with respect to the acrylic polymer in the verified translation and no support to recite lower limit of the blending ratio of 0.5.

With respect to Kato et al. (U.S. 6,440,203), applicants argue that Kato is not a relevant reference against present claims 7-8 and 10-12 given that Kato disclose very broad blending ratio of dipropylene glycol normal propyl ether to acrylic resin, i.e. 0.044 to infinity, as compared to the presently claimed narrow range and disclose broad range of amount of dipropylene glycol normal propyl ether as compared to the presently claimed narrow range and thus Kato does not disclose the presently blending ratio or amount of dipropylene glycol normal propyl ether with sufficient specificity. Applicants also argue that there is no motivation in Kato to utilize presently claimed blending ratio of dipropylene glycol normal propyl ether to acrylic polymer especially in light of the unexpected results set forth in the present specification.

It is noted that the examiner's position remains that the upper limit of the blending ratio of dipropylene glycol normal propyl ether to acrylic polymer in Kato is not infinity. It is noted that the ink of Kato requires the use of 0.1-10% first colorant. From col.3, lines 52-58, it is clear that the use of the first color is mandatory in the ink. In light of this, given the disclosure in col.4, lines 43-48 of Kato et al. that in a preferred embodiment the ink contains first colorant and second colorant, i.e. pigment, such that the weight ratio of the first colorant to the pigment in the second colorant is 1/3 to 7/1, it is clear that there is necessarily present some amount of first colorant and second colorant. While col.4, lines 49-53 of Kato discloses that the total amount of first colorant and pigment contained in the second colorant is not more than 20%, such disclosure must be read in light of the reference as a whole. In light of the other disclosures of Kato that colorant is necessarily present in the ink, it is clear that the lower limit of the amount of first colorant and pigment contained in the second colorant is not zero.

Given that the range of the total amount of the first colorant and the pigment contained in the second colorant is no more than 20% or no more than 15% and given that the ratio of first colorant to the pigment contained in the second colorant is 1/3 to 7/1, it is calculated that there is present no more than 15% pigment ( $20 \times 3/4$ ). Further, given that the lower limit of the total amount of first colorant and pigment comprised in the second colorant is necessarily greater than zero (as discussed in the preceding paragraph) and given that the acrylic polymer is present in amount of 5-150% based on the amount of pigment, it is calculated that the acrylic polymer is present in amount of 0.75 ( $0.05 \times 15$ ) - 22.5% ( $1.5 \times 15$ ). In light of this, it is calculated that the ratio of dipropylene glycol normal propyl ether, which is present in the ink of Kato in amount of 1-20% or 2-15%, to acrylic polymer is 0.04 ( $1/22.5$ ) to 20 ( $15/0.75$ ).



Applicants point to MPEP 2131.03 (II) as well as the unexpected data set forth in Table 12 of the present specification. Applicants argue that the data shows that the combination of dipropylene glycol normal propyl ether and acrylic polymer is excellent in straight travel stability, recovery performance, fixative performance, and drying performance.

It is noted that the data compares ink within the scope of the present claims, i.e. comprising acrylic polymer and dipropylene glycol mono-n-propyl ether, with ink outside the scope of the present claims, i.e. comprising no acrylic polymer and dipropylene glycol mono-n-propyl ether, comprising acrylic polymer and no dipropylene glycol mono-n-propyl ether, comprising acrylic polymer and tripropylene glycol methyl ether, comprising acrylic polymer and diethylene glycol diethyl ether, comprising acrylic polymer and triethylene glycol diethyl ether, and comprising triethylene glycol dimethyl ether and salt of copolymer of acrylic acid/sulfonic acid monomer. It is shown that the inks of the present invention are superior in terms of recovery performance, straight travel stability, fixation, and/or drying.

However, there is no evidence of unexpected or surprising results regarding the amount of dipropylene glycol mono-n-propyl ether or the ratio of no dipropylene glycol mono-n-propyl ether to acrylic polymer. That is, while the comparative data set forth in the present specification establishes the criticality of using dipropylene glycol n-propyl ether and acrylic polymer, Kato already discloses the use of dipropylene glycol mono-n-propyl ether and acrylic polymer. There is no data, however, that establishes criticality regarding the amount of dipropylene glycol mono-n-propyl ether or ratio of dipropylene glycol n-propyl ether to acrylic polymer.

Applicants argue that the data in Table 12 supports the assertion of unexpected results in light of examples 4 and 5 which utilize dipropylene glycol n-propyl ether and acrylic polymer in

claimed ratio and in light of the disclosure in the present specification which sets forth what happens outside the presently claimed ratio of dipropylene glycol n-propyl ether to acrylic polymer.

However, while the present specification discloses the preferred amount of dipropylene glycol n-propyl ether utilized and discloses the ratio of dipropylene glycol n-propyl ether to acrylic polymer, there is no evidence, i.e. data, to support applicants' position regarding what happens outside the amount of dipropylene glycol n-propyl ether or the ratio of dipropylene glycol n-propyl ether to acrylic polymer.

In response to the examiner's position that the data does not establish criticality of the ratio of dipropylene glycol n-propyl ether to acrylic polymer, applicants argue that the data does provide proper comparison of ink within the scope of the present claims, i.e. comprising ratio of dipropylene glycol n-propyl ether to acrylic polymer as presently claimed (examples 4-5), with ink outside the scope of the present claims but within the scope of Kato, i.e. ratio of dipropylene glycol n-propyl ether to acrylic polymer is infinity (comparative example 1).

However, as set forth above, given the examiner's position that upper limit of the ratio of dipropylene glycol n-propyl ether to acrylic polymer is not infinity, it is the examiner's position that such data is not persuasive given that the data is not commensurate in scope with the scope of Kato.

Similarly, applicants argue that with respect to the amount of dipropylene glycol n-propyl ether required in present claim 10, the data in Table 12 establishes unexpected or surprising results over Kato.

However, it is the examiner's position that the data is not commensurate in scope with Kato given that there is no comparison between ink within the scope of the present claims, i.e. comprising 0.5-5% dipropylene glycol n-propyl ether, with ink outside the scope of the present claims but within the scope of Kato, i.e. comprising amount within the range disclosed by Kato, i.e. 1-20% or 2-15%, but outside that presently claimed.

Applicants also argue that in order for a *prima facie* case of obviousness to exist, the prior art must disclose a ratio. Given that Kato do not explicitly disclose ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer but only indirectly implicitly discloses ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer, the disclosure of Kato is inadequate to provide a proper *prima facie* case of obviousness.

However, as set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Further, Kato discloses the use of 1-20% or 2-15% dipropylene glycol mono-n-propyl ether as penetrating agent and disclose the use of 0.75-22.5% acrylic polymer as dispersant. It therefore would have been within the skill level of one of ordinary skill in the art to choose amounts of dipropylene glycol mono-n-propyl ether and acrylic polymer including those that result in blending ratio as presently claimed in order to produce ink with effective penetration into substrate and good dispersion stability. That is, while Kato does not explicitly disclose ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer, it is the examiner's position that a *prima facie* case of obviousness has been established with respect to



Art Unit: 1714

Kato given that, as described above, such ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer can be calculated.

Applicants also argue that Kato is not a relevant reference against the present claims given that there is no disclosure in Kato of any effect on straight line travel stability or recording head discharge stability by adding dipropylene glycol mono-n-propyl ether to an ink containing an acrylic polymer or any disclosure of interaction between the dipropylene glycol mono-n-propyl ether and the acrylic polymer.

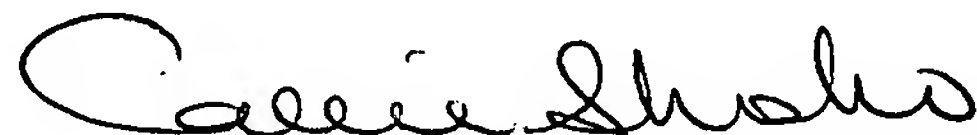
While it is agreed that Kato does not disclose any interaction between dipropylene glycol mono-n-propyl ether and acrylic polymer, the fact remains that Kato discloses ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer that overlaps that presently claimed. Given that Kato discloses the use of 1-20% or 2-15% dipropylene glycol mono-n-propyl ether as penetrating agent and disclose the use of 0.75-22.5% acrylic polymer as dispersant, it would have been within the skill level of one of ordinary skill in the art to choose amounts of dipropylene glycol mono-n-propyl ether and acrylic polymer including those that result in blending ratio as presently claimed in order to produce ink with effective penetration into substrate and good dispersion stability.

Therefore, it is the examiner's position that it would have been obvious to one of ordinary skill in the art to use dipropylene glycol mono-n-propyl ether and acrylic polymer in Kato in amounts and ratio, including that presently claimed, in order to produce ink with effective penetration into substrate and good dispersion stability, and thereby arrive at the claimed invention.

Art Unit: 1714

Although there is no disclosure in Kato that the dipropylene glycol mono-n-propyl ether is utilized to effect straight line travel stability or recording head discharge stability or that the acrylic polymer is utilized to improve recovery performance and fixation performance, given that Kato discloses amount of dipropylene glycol mono-n-propyl ether and ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer that overlaps that presently claimed, and given that it would have been obvious to one of ordinary skill in the art to chose amounts and ratio as presently claimed, it is clear that the ink of Kato would therefore intrinsically possess good straight line travel stability and recording head discharge stability as well as improved recovery performance and fixation performance, and thereby arrive at the claimed invention.

In light of the above, it is the examiner's position that the rejections of record utilizing Valentini et al., Segawa et al., and Kato remain relevant against present claims 7-8 and 10-12. It is noted that given that Koga et al. is not longer a relevant reference against present claims 1-2 and 4-6, these claims are now allowable given that Koga et al. was the only prior art utilized against these claims.



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
7/5/07